

1 1. An underwater sound source which comprises:

2 a housing having an inner and an outer surface, the housing being adapted to receive fluid

3 therein to form a fluid column inside the housing; and

4 a monopole driver positioned within the housing, the underwater sound source resonating

5 when the monopole driver excites the fluid column.

1 2. The underwater sound source according to claim 1 wherein the underwater sound source

2 resonates at a frequency within the range of 200 to 1000Hz.

1 3. The underwater sound source according to claim 2 wherein the underwater sound source

2 resonates at a frequency of about 260 Hz.

1 4. The underwater sound source according to claim 1 wherein the monopole driver is a

2 spherical monopole.

1 5. The underwater sound source according to claim 4 wherein the housing is cylindrical and

2 has a center, the monopole driver being positioned within the center of the housing.

1 6. The underwater sound source according to claim 5 wherein the housing has a length of

2 2.0 meters.

1 7. The underwater sound source according to claim 6 which further comprises an

2 electronics module.

1 8. The underwater sound source according to claim 7 wherein the electronics module is

2 positioned on the outer surface of the housing.

1 9. The underwater sound source according to claim 8 wherein the monopole has an electro-
2 acoustic conversion efficiency of about 50%.

1 10. The underwater sound source according to claim 9 wherein the housing is a steel free-
2 flooded pipe.

1 11. The underwater sound source according to claim 10 wherein the fluid is seawater.

1 12. The underwater sound source according to claim 6 which further comprises:
2 means for positioning the spherical monopole within the center of the housing.

1 13. The underwater sound according to claim 12 wherein the housing has an inner surface
2 and the means for positioning comprises:
3 a support secured to the inner surface;
4 at least one spoke extending from the support towards the center of the housing, the
5 member being secured to the spherical monopole.

1 14. The underwater sound source of claim 13 wherein the support is a ring support having a
2 perimeter.

1 15. The underwater sound source according to claim 14 which further comprises:
2 at least four equally spaced spokes attached to the ring support and extending from the
3 support toward the center of the housing, the spokes being secured to the spherical monopole.

4 16. The underwater sound source according to claim 15 wherein the housing has an
5 equatorial plane, the ring support, spokes, and spherical monopole being positioned in the
6 equatorial plane.